

# Ying Wen / 温颖

## Curriculum Vitae

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Google Scholar



*Research Interests: Multi-Agent Reinforcement Learning, Machine Learning Systems.*

## Professional Experience

- Sept 2020 - **Shanghai Jiao Tong University, John Center**, Assistant Professor.  
Shanghai, CN Reinforcement Learning, Multi-Agent Systems, Game Theory, Machine Learning Systems.
- Sept 2019 - **Huawei Tech. R&D UK**, *Research Intern*.  
Aug 2020 Multi-agent reinforcement learning algorithms and applications.  
London, UK Best Intern Award.
- Apr 2016 – **MediaGamma**, *Research Intern*.  
Sept 2019 Real-time decision making optimization and large-scale user response prediction systems using deep learning  
London, UK and reinforcement learning models.

## Education

- 2016 – 2020 **University College London**, *PhD*, in Computer Science.  
London, UK *Thesis*: Modelling Mutual Influence in Multi-Agent Reinforcement Learning.  
*Supervisor*: Prof. Jun Wang.  
*Award*: Feldman Scholarship in Statistical Machine Learning.
- 2015 – 2016 **University College London**, *Master of Research*, **Distinction Honor**.  
London, UK *Thesis Topic*: Learning Distributed Representation of Categorical Data.  
*Supervisor*: Prof. Jun Wang.
- 2011 – 2015 **BUPT & QMUL**, *BSc(Eng)*, **First Class Honor**.  
Beijing, CN *Awards*: First Class Academic Scholarship, Merit Student Honor, Excellent Student Cadre.

## Publications: Multi-Agent Theories and Algorithms

- 2021 Nicolas Perez-Nieves, Yaodong Yang, Oliver Slumbers, David Mguni, **Ying Wen**, Jun Wang. Modelling Behavioural Diversity for Learning in Open-Ended Games. ICML 2021.
- 2021 David Mguni, Yutong Wu, Yali Du, Yaodong Yang, Ziyi Wang, Minne Li, **Ying Wen**, Joel Jennings, Jun Wang. Nonzero-Sum Stochastic Games with Potentials. ICML 2021.
- 2021 Yaodong Yang, Jun Luo, **Ying Wen**, Oliver Slumbers, Daniel Graves, Haitham Bou Ammar, Jun Wang, and Matthew E. Taylor. Diverse Auto-Curriculum is Critical for Successful Real-World Multiagent Learning Systems. Blue Sky Track, AAMAS 2021. **Blue Sky Ideas Award**.
- 2020 **Ying Wen\***, Yaodong Yang\*, Liheng Chen, Jun Wang, Kun Shao, David Mguni, Weinan Zhang. Multi-Agent Determinantal Q-Learning. ICML 2020.
- 2020 **Ying Wen\***, Yaodong Yang\*, Jun Wang. Generalized Recursive Reasoning for Bounded Rationality in Multi-Agent Interactions. IJCAI 2020.
- 2019 **Ying Wen\***, Zheng Tian\*, Zhichen Gong, Faiz Punakkath, Zou, Shihao, Jun Wang. A Regularized Opponent Model with Maximum Entropy Objective. IJCAI 2019.
- 2019 **Ying Wen\***, Yaodong Yang\*, Rui Luo, Jun Wang, Wei Pan. Probabilistic Recursive Reasoning for Multi-Agent Reinforcement Learning, ICLR 2019. [Citations: 45]

- 2019 Ming Zhou, Yong Chen, **Ying Wen**, Yaodong Yang, Yufeng Su, Zhang Weinan, Dell Zhang, Jun Wang, Han Liu. Factorized Q-Learning for Large-Scale Multi-agent Systems. DAI 2019. [Citations: 25]
- 2018 Yaodong Yang, Lantao Yu, Yiwei Bai, **Ying Wen**, Weinan Zhang, Jun Wang. A Study of AI Population Dynamics with Million-Agent Reinforcement Learning. AAMAS 2018. [Citations: 19]
- 2018 Haifeng Zhang, Jun Wang, Zhiming Zhou, Weinan Zhang, **Ying Wen**, Yong Yu, Wenxin Li. Learning to Design Games: Strategic Environments in Deep Reinforcement Learning, IJCAI 2018.
- 2017 **Ying Wen\***, Peng, Peng\*, Yaodong Yang, Quan Yuan, Zhenkun Tang, Haitao Long, Jun Wang. Multiagent Bidirectionally-Coordinated Nets. Emergent Communication Workshop, NIPS 2017. [Citations: 278].

## Publications: Multi-Agent Systems and Applications

- 2021 Ming Zhou, Ziyu Wan, Hanjing Wang, Muning Wen, Runzhe Wu **Ying Wen**, Yaodong Yang, Weinan Zhang, Jun Wang. MALib: A General Training Framework for Multi-Agent Reinforcement Learning. NeurIPS 2021. (Under Review)
- 2021 Yang Li, Fanglei Sun, Wenbin Song, **Ying Wen**, Kai Li, Jun Wang, Yang Yang. Retrospective Thinking based Multi-Agent System for Wireless Video Transmissions. ICC 2021.
- 2020 Ming Zhou, Jun Luo, Julian Villella, Yaodong Yang, David Rusu, Jiayu Miao, Weinan Zhang, Montgomery Alban, Iman Fadakar, Zheng Chen, Aurora Chongxi Huang, **Ying Wen**, et. al. SMARTS: Scalable Multi-Agent Reinforcement Learning Training School for Autonomous Driving. CoRL 2020, **Best System Paper Award**.

## Publications: Others

- 2019 **Ying Wen**, Tianyao Chen, Weinan Zhang, Jun Wang. Pairwise Multi-Layer Nets for Learning Distributed Representation of Multi-field Categorical Data. DLP-KDD 2019.
- 2016 Yanru Qu, Han Cai, Kan Ren, Weinan Zhang, Yong Yu, **Ying Wen**, Jun Wang. Product-based Neural Net for User Response Prediction. ICDM 2016. [Citations: 249].
- 2016 **Ying Wen**, Weinan Zhang, Rui Luo, Jun Wang. Learning Text Representation Using Recurrent Convolutional Neural Network with Highway Layers. Neu-IR, SIGIR 2016. [Citations: 43].

\* Equal Contribution. \*\***Total Citations: 712**, by 04/May/2021 from Google Scholar.

## Open Source Projects

- 2021 MALib: A General Training Framework for Multi-Agent Reinforcement Learning. [Github Link].
- 2020 SMARTS: A Simulation Platform for Reinforcement Learning and Multi-Agent Research on Autonomous Driving, [Github Link].

## Teaching

- 2021 Artificial Intelligence Programming Practices, SJTU, Lecturer.
- 2018/19/20 MSc/MRes Research Project, UCL, Teaching Assistant.
- 2019/20 COMP1024: Multi-Agent Artificial Intelligence, UCL, Teaching Assistant.
- 2017/18/19 COMPGI15/M052: Information Retrieval and Data Mining, UCL, Teaching Assistant.
- 2017/18 COMPGW02/M041: Web Economics, UCL, Teaching Assistant.

## Grants and Honors

- 2021 Blue Sky Ideas Award, AAMAS 2021.
- 2021 Shanghai Sailing Program, Shanghai Science and Technology Committee.

- 2020 Best System Paper Award, CoRL 2020.
- 2020 Best Intern Award, London Research Center, Huawei.
- 2016 Feldman PhD Scholarship in Computational Statistics, UCL.

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## Service

Conference PC Member ICML, AAAI, IJCAI, NeurIPS, IROS, ICAPS, DLP-KDD.

Journal Reviewer Transactions on Information Forensics & Security, Frontiers of Computer Science, Operational Research

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## Tutorials and Invited Talks

- 2021/04 MALib: A General Training Framework for Multi-Agent Reinforcement Learning, SenseTime.
- 2021/04 A Game-Theoretic Approach to Multi-Agent Trust Region Policy Optimization, Tencent AI.
- 2021/11 Multi-Agent Deep Reinforcement Learning, QCAI, Tianjin University.
- 2021/10 Deep Multi-Agent Reinforcement Learning: Direct and Game-Theoretical Approaches, Tutorial, DAI 2020
- 2021/10 Multi-Agent Deep Reinforcement Learning, CS Seminars, Fudan University.
- 2021/09 Multi-Agent Deep Reinforcement Learning, Intelligent Decision Workshop, Institute of Automation, Chinese Academy of Sciences.
- 2021/08 Multi-Agent Determinantal Q-Learning, RL Seminars, University of Edinburgh.

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## References

- 1 **Jun Wang**, *Professor*.  
Computer Science, UCL Centre for Artificial Intelligence  
University College London  
*Turing Fellow*, the Alan Turing Institute  
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**Homepage:** <http://www0.cs.ucl.ac.uk/staff/Jun.Wang/>
- 2 **Xinbing Wang**, *Distinguished Professor*, Executive Director of John Hopcroft Center.  
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Shanghai Jiao Tong University  
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- 3 **Weinan Zhang**, *Associate Professor*.  
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